sds Kerr
SYBRON DENTAL SPECIALTIES
21 Commerce Drive, Danbury, CT 06810-4153, USA
TEL. (800) 537-7123 • International TEL. (714) 516-7669
FAX (800) 537-7345 • International FAX (714) 516-7581

Optilux products are internationally distributed through Kerr Corporation

European Union Representative
Kerr Italia S.p.A.
Via Passanti, 332
I-84018 Scafati (SA)
ITALIA
+39-081-850-8311

Kerr UK Limited
1 Mallard Business Centre
Mallard Road, Bretton
Peterborough, Cambridgeshire
PE3 8YP
ENGLAND
+44-1733-260-998

Kerr GmbH
Liststrasse 28
D76185 Karlsruhe
GERMANY
+49-721-95567-0

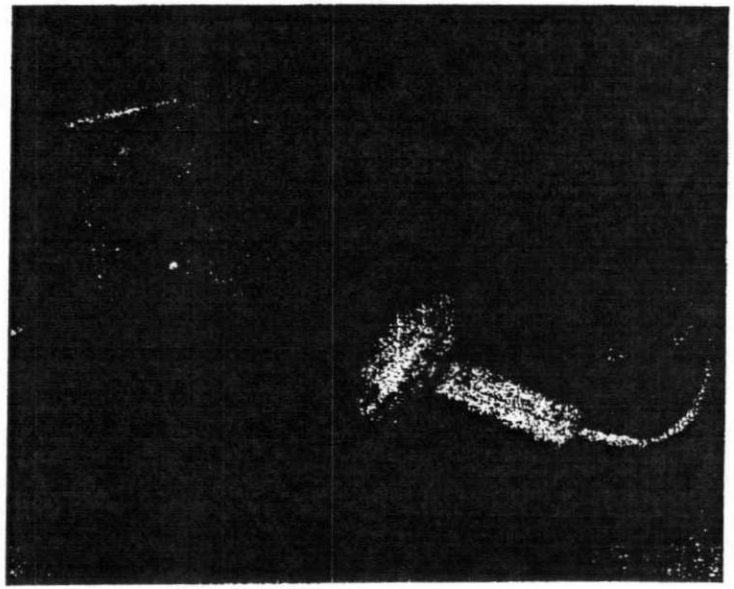
Kerr Italia S.p.A.
Succ. Française
7-9 rue du Sergent Bobillot
93100 Montreuil Sous Bois
FRANCE
+33-1-48-51-18-50/60

Kerr Australia Pty, Limited
Unit 11
112-118 Talavera Road
North Ryde 2113
New South Wales
AUSTRALIA
+61-29-870-7500

Sybron Dental Specialties Japan, Inc.
Kitamura Bldg.
29-24 Honkomagome 2-chome
Bunkyo-Ku, Tokyo
113-0021
JAPAN
+81-3-5977-3126

960681 REV. D

OPERATING INSTRUCTIONS OPERATING
INSTRUCTIONS OPERATING INSTRUCTIO
OPERATING INSTRUCTIONS OPERATING
INSTRUCTIONS OPERATING INSTRUCTIO
TIONS **OPERATING INSTRUCTIONS** OPER
INSTRUCTIONS OPERATING INSTRUCTIO
OPERATING INSTRUCTIONS OPERATING
INSTRUCTIONS OPERATING INSTRUCTIO



OPTILUX 501 - CURING LIGHT

- ♦ OPERATOR'S MANUAL
- ♦ MANUAL DEL USUARIO
- ♦ MANUEL D'UTILISATION
- ♦ MANUAL DO OPERADOR

♦ ENGLISH ♦

TECHNICAL DESCRIPTION

	Page
1. DESCRIPTION	3
2. ERGONOMIC FEATURES	3
3. SPECIFICATIONS AND EQUIPMENT CLASS	4
4. LAMP REPLACEMENT	5
5. FUSE REPLACEMENT	6
6. TROUBLESHOOTING	7

INSTRUCTIONS FOR USE

7. SAFETY PRECAUTIONS	8
8. ASSEMBLY/MOUNTING	10
9. OPERATION	11
10. MAINTENANCE	16
11. CLEANING/DISINFECTING/STERILIZING	18
12. LIABILITY	20
13. WARRANTY	20
14. ACCESSORIES AND REPLACEMENT PARTS	21
15. FIGURES/PHOTOGRAPHS	93
—DECLARATION OF CONFORMITY	back

TECHNICAL DESCRIPTION

1. DESCRIPTION

The Optilux 501 is a visible curing unit intended for polymerization of light cured materials by dental professionals.

2. ERGONOMIC FEATURES

Many ergonomic features are incorporated into the Optilux 501 as defined below:

a) **Carrying handle:** The recessed back at the top of the unit was designed to be used as a carrying handle. The unit is well balanced and, with the handpiece in place, can be easily carried by placing fingers in the recess and gripping the top of the unit.

b) **Ventilation openings:** The openings are hidden on the top and bottom of the control unit to help avoid liquids from entering. Do not cover openings.

c) **Handpiece hanger:** The hanger is designed to secure the handpiece and prevent it from becoming accidentally dislodged when the unit is carried. In addition, the hanger material is durable and resistant to breakage.

d) **Handpiece placement:** The handpiece can be placed in the hanger, pointing in either direction for left or right handed operators, without compromising the secure fit.

e) **Easy grip:** With the handpiece resting in its hanger, the handle is positioned away from the front surface of the control unit so that a gloved hand can slip around the handle and grip it comfortably. Remove the handpiece by rotating the handle forward while lifting the handpiece out of the hanger.

f) **Keypad:** The raised keys of the keypad provide a tactile feel when depressed, with audio and visual confirmation of the selection.

g) **Smooth equipment surfaces:** The Optilux is designed with smooth surfaces for easy cleaning. Refer to SECTION 11, CLEANING/ DISINFECTING/STERILIZING for details.

3. SPECIFICATIONS AND EQUIPMENT CLASS

a)	AC supply connection:	100-120V~/2.0A, 50/60 Hz 220-240V~/1.0A, 50/60 Hz
b)	Power input:	160 VA, nominal
c)	Equipment class:	II
d)	Protection from electric shock:	Type BF
e)	Protection from ingress of liquids:	None
f)	Environment:	Equipment not suitable for use in the presence of a flammable anaesthetic mixture with air or nitrous oxide
g)	Transport and storage:	
	• Ambient temperature	-40°F to 158°F (-40°C to +70°C)
	• Relative humidity	10% to 100%, including condensation
	• Atmospheric pressure	.5 atm to 1.0 atm (501 hPa to 1060 hPa)
h)	Operation:	Continuous operation with intermittent loading, duty cycle of 1 minute ON/4 minutes OFF
i)	Fuses (2 per unit):	100-120V, T 1.6 A, part no. 30257 220-240V, T 0.8 A, part no. 30246
j)	Lamp:	12 Volt, 80 Watt OptiBulb, part no. 21237
k)	Output wavelength range:	400-505 nm (nanometers)
l)	Output light intensity:	
	• 10, 20, 30, 40, C	850 mW/cm² minimum using 8mm curved turbo+ light guide
	• R, B, BLEACH	1000 mW/cm² minimum using 8mm curved turbo+ light guide
		(mW/cm² = milliwatts per centimeter square)
m)	Curing radiometer:	
	• Sensitivity	400-510 nm
	• Intensity range	100-1999 mW/cm²
	• Accuracy	100 mW/cm²
n)	Standard fiber optic light guides:	11mm curved light guide, part no. 20898 8mm turbo+ curved light guide, part no. 952213
o)	Unit overall dimensions:	
	• Height	8.0" (20.5 cm)
	• Length	7.5" (19.0 cm)
	• Width	6.25" (16.0 cm)
p)	Unit weight:	
	• Handpiece	10 oz. (300 g.)
	• Control Box	6 lb. 6 oz. (2.9 kg.)
q)	Thermal safety:	Handpiece thermostat protection
r)	Additional symbols:	
	• Attention, consult accompanying documents	• OFF
	• Alternating Current	• ON

4. LAMP REPLACEMENT

a) ⚠ **CAUTION: Before attempting to replace the lamp turn the master power switch S1 "OFF" (O) and disconnect curing light unit from AC outlet (Mains). Allow the handpiece and lamp to cool completely!**

Replacement with a KERR 12 Volt, 80 Watt OptiBulb halogen lamp, part no. 21237 is strongly recommended.

b) Remove the fiber optic light guide by pulling it out of the handpiece.

c) Using a screwdriver, turn the two screws counterclockwise so that the rear handle separates from the front handle as shown in Figures 1 and 2.

d) Remove lamp from socket by pulling it forward with a rocking up and down motion, as shown in Figure 3.

e) Replace with new lamp part no. 21237, 12 Volt, 80 Watt as shown in Figure 4.

f) Re-assemble the two halves of the handpiece as shown in Figure 5. First check to see that the trigger switch protrudes through the opening in the front handle. Bring both halves together evenly so that the (2) two screws of the rear handle are placed inside the openings of the front handle. Press the halves together and tighten the (2) two screws until snug. **Do not over tighten!**

g) **IMPORTANT: Reset the lamp hour meter.**

After lamp replacement you should reset the lamp hour meter. A red push-button switch marked RESET is located on the back of the control unit between the top ventilation openings as shown in Figure 6. **Press and hold the reset button while turning the main power switch S1 "ON" (I).** Lamp hour meter should read E0 after reset.

5. FUSE REPLACEMENT

a) ⚠ **CAUTION: Before attempting to change fuses turn the master power switch S1 "OFF" (O) and disconnect curing light unit from AC outlet (Mains).**

b) Use a screwdriver and turn fuse caps counterclockwise as shown in Figure 7 to remove both fuse caps and attached fuses.

c) Replace fuses with same type and value:

100-120V, T 1.6 A, part no. 30257
220-240V, T 0.8 A, part no. 30246

Replace each fuse in the fuse cap holder and push the fuse cap back into the housing turning clockwise as shown in Figure 8.

6. TROUBLESHOOTING GUIDE

PROBLEM	SERVICE PROCEDURE
1. Light output is reduced.	1. See Section 9, OPERATION, item j, RADIOMETER for service procedure.
2. Curing lamp is on, fan is not operating.	2. Unit must be shut off immediately and returned for repair.
3. Curing lamp does not go on, fan is not operating.	3a. Check to make sure power switch located on control unit is in "ON" position and 5 second "activate" time has elapsed. 3b. Check power cord connections both at unit and at AC outlet (Mains) to be sure they are properly seated. Check primary fuses located in the back of the unit (see Section 5, FUSE REPLACEMENT). • If fuses are blown, a larger problem is often indicated. If problems recur with new fuses, return entire unit for repair. 3c. Try another power outlet.
4. Curing lamp does not go on, but fan is working.	4a. Check the lamp to be sure it is properly seated. If OK, then, 4b. Replace the lamp. (See Section 4, LAMP REPLACEMENT). 4c. Unit may have overheated due to very extended operation. • Wait for unit to cool down. Lamp will respond to switch activation.

KERR will, upon request, make available circuit diagrams, part lists, calibration instructions and other information which will aid appropriately qualified technical personnel to repair parts of the equipment classified as repairable.

INSTRUCTIONS FOR USE

7. SAFETY PRECAUTIONS

a) ⚠ **CAUTION: The fiber optic light guide is provided in a non-sterile condition and must be sterilized prior to patient contact. For sterilization instructions refer to SECTION 11, CLEANING/DISINFECTING/STERILIZING.**

b) ⚠ **CAUTION: The Optilux 501 plastic front handpiece assembly utilizes filters specifically designed for high output curing. Do not substitute the plastic front handpiece assembly or filters from other Demetron/KERR light curing units. Use of filters/plastic front handpiece assembly other than that supplied with this device may produce excessive heat and cause a severe burn of the gingiva.**

c) ⚠ **CAUTION: This curing unit produces high output curing energy (over 800 mW/cm²)! A significant increase in curing energy is possible compared with equipment you have previously used. It is important to observe the following precautions and procedures:**

- Inspect filters following the guidelines in SECTION 10, MAINTENANCE, paragraph b FILTERS.
- Use enclosed Hardness Disk to determine curing time.
- Do not place light directly on or towards unprotected gingiva or skin.
- Adjust your curing techniques in accordance with the increase in curing energy. Some examples are; decrease curing time, increase composite thickness, increase distance between light guide end and light cured materials.

d) ⚠ **CAUTION: Insufficient output (under 300 mW/cm²) can result in varying degrees of under curing of the restorative material. Low output may not achieve maximum physical properties in the light cured material, leaving a soft uncured layer at the bottom of the restoration.**

e) ⚠ **CAUTION: Do not look directly at the light emitted from this curing unit. Do not use this device without suitable protective eyeware for the operator, assistant and patient. Suitable protective eyeware blocks all energy below 550 nm. Refer to Section 14, ACCESSORIES & REPLACEMENT PARTS for suitable protective eyeware.**

f) ⚠ **CAUTION: Persons having a history of photosensitive reactions or who are using photosensitizing drugs should not be exposed to light from this unit.**

g) ⚠ **CAUTION: Equipment is not suitable for use in the presence of a flammable anaesthetic mixture with air or nitrous oxide.**

h) **IMPORTANT:** To prolong lamp life, allow the fan to complete its automatic cooling cycle. Once the fan has turned off, the unit may also be switched off.

i) To help maintain curing performance, it is recommended that the fiber optic light guide not touch restorative material within the first few seconds. Subsequently, the fiber optic light guide may be placed in contact with the material. The purpose of this technique is to prevent the composite material from adhering to the tip. Once the outer layer of the composite is set, no adhesion occurs.Should adhesion occur accidentally, no damage is done. Composite material can be easily removed with a blunt instrument to restore full transmission capability.

j) After each curing procedure is completed, the handpiece should always be placed in its holder.

k) All Optilux models have been designed to meet worldwide electrical safety standards, including U.S., Canadian, and European, and to be safe and effective for all dental applications.

8. ASSEMBLY/MOUNTING

Box contains:

Qty.	Description
1	Optilux 501 curing light
1	12 Volt/80 watt OptiBulb halogen lamp installed in curing light unit
1	8mm diameter turbo+ curved fiber optic light guide
1	11mm diameter curved fiber optic light guide
1	protective light shield
1	mounting bracket with instructions
1	detachable power cord
1	adjusting tool
1	operator's manual containing declaration of conformity
1	hardness disk

a) **HANDPIECE:**

Position the handpiece in its holder as shown in Figure 9.

b) **AC (MAINS) SUPPLY CONNECTION:**

⚠ **CAUTION: Proper input voltage is indicated on the serial number label on back of unit!**

First connect the power cord to the control unit by plugging it into receptacle R1 located on the side of control unit as shown in Figure 9. Next connect the power cord to the AC (Mains) supply outlet.

c) **MOUNTING THE CONTROL UNIT:**

The Optilux 501 curing light is designed for either tabletop use or wall mounting. If wall mounting is desired, mount the unit as shown in Figure 9. Follow instructions in mounting bracket kit provided.

d) **FIBER OPTIC LIGHT GUIDE:**

Rotate the fiber optic light guide slightly while inserting it into the nose cone chuck and you will hear a click sound when it is fully seated.

9. OPERATION

We recommend the operator (s) become familiar with the unit before use.

a) **POWER ON:**

Press master switch S1 to the **"ON" (I)** position as shown in Figure 10. Allow 5 seconds for control system to activate before attempting to use lamp.

IMPORTANT: During periods of frequent use, the unit can be left with master switch S1 in the **"ON" (I)** position. Following use, the fan should be allowed to complete it's cooling cycle and master switch S1 should always be turned to the **"OFF" (O)** position. Always be sure to turn master switch S1 to the **"OFF" (O)** position at the end of the day.

b) **ELAPSED LAMP TIMER:**

Observe the display during the first 5 seconds after power up. The display will read **E 0**, indicating the elapsed lamp time. The elapsed lamp timer will accumulate usage of the lamp in one hour increments up to **E99** or 99 hours. After five seconds the unit will switch to CONTINUOUS CURING CYCLE mode and the display will read **CCC**. The Optilux 501 curing light is now ready for curing...

c) **CONTINUOUS CURING CYCLE:**

After initial power up, the unit will automatically switch to CONTINUOUS CURING CYCLE mode, and the blue indicator will illuminate next to **C** (CONTINUOUS CURING CYCLE) on the keypad. The display will read **CCC**. The CONTINUOUS CURING CYCLE allows the operator to cure with the output light intensity above 850 mW/cm². Pressing the handpiece trigger **T1**, as shown in Figure 11, will activate the curing lamp and the display will change to read **0**. The display will begin to count the curing cycle in seconds up to **999** seconds maximum. The curing cycle can be terminated at any time by pressing the trigger switch a second time. The display will indicate the total time for the curing cycle. The display will reset itself after the cooling fan stops or when a new curing cycle is initiated.

d) **STANDARD CURING CYCLES:**

There are four STANDARD CURING CYCLES. Keypad keys labeled **10, 20, 30,** and **40** each select a fixed curing cycle measured in seconds. Depressing one of these keys changes the display to indicate the selected curing cycle. The STANDARD CURING CYCLE allows the operator to cure with the output light intensity above 850 mW/cm². Pressing the handpiece trigger will activate the curing lamp. The display will begin to count the STANDARD CURING CYCLE in seconds. At the end of the cycle, the display will freeze at the maximum time. The STANDARD CURING CYCLE can be terminated at any time by pressing the trigger switch a second time. The display will freeze at the total curing time used. The display will reset itself after the cooling fan stops or when a new curing cycle is initiated.

e) **RAMP CURING CYCLE:**

Depressing the keypad key marked R selects the 20 second RAMP CURING CYCLE. Initially the display will read 10. The RAMP CURING CYCLE allows the operator to slow cure with the output light intensity initially at 100 mW/cm², increasing exponentially to 1000 mW/cm² in the first 10 seconds of the cycle. The output light intensity remains at 1000 mW/cm² for the final 10 seconds of the cycle. Pressing the handpiece trigger will activate the curing lamp. The display will begin to count up from 0 to 20 seconds. At the end of the cycle, the display will freeze at 20 seconds, and the lamp will shut off. The RAMP CURING CYCLE can be interrupted by pressing the handpiece trigger a second time.

f) **BOOST CURING CYCLE:**

Depressing the keypad key marked **B** selects the 10 second BOOST CURING CYCLE. Initially the display will read 10. The BOOST CURING CYCLE allows the operator to cure with the output light intensity above 1000 mW/cm². Curing time can be decreased in this mode.

It is recommended that you use the enclosed Kerr Disposable Hardness Disk, shown in Figure 13, to test the lamp-material curing ability. Re-order part number is 20399.

Pressing the handpiece trigger will activate the curing lamp. The display will begin to count up from 0 to 10 seconds. At the end of the cycle, the display will freeze at 10 seconds, and the lamp will shut off. The BOOST CURING CYCLE can be interrupted by pressing the handpiece trigger a second time.

g) **BLEACHING CURING CYCLE:**

Depressing the keypad key marked **BLEACH** selects the 30 second BLEACHING CYCLE. Initially the display will read 30. The BLEACH CYCLE allows the operator to use the unit with light activated bleaching materials. The output light intensity remains above 1000 mW/cm² for the duration of the cycle.

⚠ **A rubber dam must be used to protect the gingiva during all procedures. Follow all precautions indicated in the instructions supplied with the bleaching product.**

Pressing the handpiece trigger will activate the curing lamp. The display will begin to count up from 0 to 30 seconds. At the end of the cycle, the display will freeze at 30 seconds, and the lamp will shut off. The BLEACH CYCLE can be interrupted by pressing the handpiece trigger a second time.

h) **KEYPAD FEATURES:**

After depressing any key on the keypad, a blue indicator will light and the unit will emit a beep confirming the selection.

i) **COOLING FAN:**

Depressing the trigger switch will also activate the unit's cooling fan. The fan will continue to operate through the curing cycle and for a short period of time after the lamp turns off. The amount of time the fan will remain on is automatically adjusted by the length of the curing cycle. Always allow the fan to complete it's cooling cycle before switching control unit off.

j) **BEEP SELECTION:**

The unit has four different beep functions. A switch marked **BEEP MODE** is located on the back of the control unit between the top ventilation openings as shown in Figure 6. This rotary switch has a shaft protruding through the plastic case and a small adjusting tool (provided with the unit) is necessary to turn the switch as shown in Figure 6.

A small slot in the form of an arrow 5 is visible at the end of the shaft. The beep mode is factory preset to position 1. To change the beep selection rotate the shaft **clockwise** to the desired position. The selection is as follows:

Position (1) ↓ 10 second interval beep.
Position (2) ↙ lamp on, 20 second interval beep, lamp off.
Position (3) ← lamp on (high frequency tone), lamp off (low freq. tone).
Position (4) ↖ 20 second interval beep.
Positions (5 - 8)↑↗→↘all beeps are off.

Note: The keypad beep is always on!

k) **BEEP VOLUME:**

The unit has two beep volume settings. A slide switch marked **HI** and **LO** is located on the back of the control unit between the top ventilation openings as shown in Figure 6. The beep volume is factory preset to the **HI** position. Use a small adjusting tool (provided with the unit) to move the switch.

Sliding the switch to the **LO** position selects the low volume setting. Sliding switch to the **HI** position selects the high volume setting. Additionally, this function also affects the volume of the keypad tone.

\) **RADIOMETER:**

The radiometer should be used in continuous mode only!

To ensure proper curing, the output light intensity should be measured prior to each time curing is performed.

A built-in curing radiometer allows the operator to evaluate the curing unit's performance. The aperture is located above the display. A series of molded circular steps assist in alignment of the fiber optic light guide with the aperture. The display will automatically convert to radiometer mode when light from the light guide shines on the aperture. The radiometer will accurately measure useful curing energy (wavelength range 400-510 nm in curing lights) from 100 mW/cm² to 1999 mW/cm².

To measure curing light output: Press the **C** key on the keypad, then center the tip of the fiber optic light guide (7mm or larger) over the aperture as shown in Figure 12. Activate the light. Be sure that the tip is positioned flush against the aperture so very little light escapes. Allow the display to stabilize, and read the output in mW/cm². After an accurate reading has been obtained, turn the light off and the display will return to it's former function. The following is a guideline for interpreting the results:

UNDER 200 mW/cm²	⚠ **Insufficient output: Do not use curing light. Inspect lamp, filters, and fiber optic light guide. Refer to section 7, SAFETY PRECAUTIONS.**
200 - 300 mW/cm²	Increase curing time.
300 - 800 mW/cm²	Use material manufacturers recommended curing time.
OVER 800 mW/cm²	⚠ **High output: Reduce curing time appropriately. Refer to Section 7, SAFETY PRECAUTIONS.**

Calibration: The curing radiometer is factory calibrated and does not require periodic calibration with normal usage as long as the unit remains sealed. Normal usage includes checking curing light output each time curing is performed. The radiometer may require calibration if the unit is damaged.

To check other curing lights on the radiometer, turn the unit on. Activate the Optilux 501 light by depressing the trigger. Position the other light guide in the radiometer port and record reading.
Remember: The light guide must be 7mm or larger to receive an accurate reading.

10. MAINTENANCE

⚠ **CAUTION: Lack of periodic maintenance can cause inadequate light output resulting in varying degrees of under curing of the composite restorative material or excessive emission of energy outside the curing range.**

⚠ **CAUTION: Before attempting to perform periodic maintenance procedures, turn the master power switch S1 "OFF" (O) and disconnect curing light unit from AC outlet (Mains). Allow the handpiece, lamp and filters to cool completely!**

Periodic maintenance performed by the operator will help ensure that your curing light continues to perform within specifications. Curing light output must be measured frequently, on a daily basis for example, using a hand held meter like the Radiometer (part no. 10503) shown in Figure 13. Follow the guidelines in the instructions included with the radiometer. In addition, on a monthly basis, visually inspect the optical components in the handpiece for degradation:

a) **LAMP** -The inner glass envelope (bulb) must be clear and the coiled filament should be visible. The lamp reflector surface (mirror) must be clean - refer to section d below. Replace the lamp (part no. 21237) if the following conditions are present: Severe blackening or frosting of the envelope; peeling or damaged reflector coating; cracked reflector, burned contact blades or pins. If contact blades or pins are burned, return entire unit to authorized service center for repair of lamp socket. Refer to section 3 for lamp replacement instructions.

Important - To prolong lamp life, allow the fan to complete its automatic cooling cycle. Once the fan has turned off, the unit may also be switched off.

b) **FILTERS** -Remove the front of the plastic handpiece containing the filters and hold it up to a low power light source such as a desk lamp. Look through the filters. The optical filters must be clean and highly reflective - refer to section d below. Replace the plastic front handpiece and filter assembly (part no. 952212) if the following conditions are present: Missing filters; blistered or peeling filter coatings; cracked filters.

c) **FIBER OPTIC LIGHT GUIDE** - Remove the fiber optic light guide and hold one end near a low power light source such as a desk lamp. The fibers must transmit light and appear translucent (clear). The surface of the fibers should have the appearance of polished glass. Replace the fiber optic light guides (part no. 20898 and 952213) if the following conditions are present: broken fibers (internal black spots or darkened areas); severely chipped or etched fiber ends. Brown or gray deposits on the ends of the fiber optic light guide can be removed using the Optics Maintenance Kit described in section d below. The black silicone rubber that covers the curved portion of certain light guides is for cosmetic and protective purposes. Torn, damaged or missing black silicone rubber will not reduce light transmission.

To help maintain fiber optic light guide performance, it is recommended that the tip of the light guide not touch the restorative material within the first few seconds of curing. Subsequently, the tip may be placed in contact with the material. The purpose of this technique is to prevent the composite material from adhering to the tip. Once the outer layer of the composite is set, no adhesion occurs. Should adhesion occur accidentally, no damage is done. Composite material can easily be rubbed off after soaking the tip in alcohol.

d) **OPTICS MAINTENANCE KIT, PART NO. 21042** - This kit contains materials for cleaning lamp reflector and optical filters, displayed in Figure 14. It also includes specially formulated low speed polishing disks to remove deposits that form on the glass surface of the fiber optic light guide during autoclaving, as shown in Figure 15. After numerous autoclave cycles, a brown or gray discoloration can accumulate on the polished ends of the light guide. This is a residue (commonly called boiler scale) that forms during the autoclave drying cycle.

The deposit is usually brown or gray in color due to contamination of the autoclave water by corrosion and ionization of metal instruments, dirty handpieces, etc. To minimize the formation of deposits, be sure that the autoclave water is clean (replaced frequently) and, if possible, autoclave fiber optic light guides separate from handpieces and other instruments. Kerr recommends that fiber optic light guides be polished every 50 autoclave cycles. Following the instructions included in the kit helps promote optimum curing performance.

11. CLEANING/DISINFECTING/STERILIZING

a) ⚠ **CAUTION: Before cleaning, disinfecting, or sterilizing turn master power switch S1 "OFF" (O) and disconnect curing light unit from AC outlet (Mains)!**

b) **FIBER OPTIC LIGHT GUIDE CLEANING AND STERILIZING INSTRUCTIONS:**

The glass fiber optic light guide is a patient contact part and must be cleaned and sterilized before each patient application. This is easily done, since the light guide is completely removable and autoclavable.

CLEANING: Fiber optic light guides should be cleaned as follows:

1. Immerse/thoroughly drench fiber optic light guide in a surface decontaminate cleaner (soap and water cleaning solution) at room temperature 69°F (20°C).
2. After at least 10 minutes, scrub with an instrument cleaning brush until visibly free from debris.
3. Rinse all parts with warm tap water.

4. Visually inspect fiber optic light guide for debris. If debris is present repeat cleaning steps two, three and four.

5. Thoroughly dry fiber optic light guide using a clean towel.

STERILIZING: Fiber optic light guides should be sterilized as follows:

1. Immediately after drying, place fiber optic light guide into a self peel sterilization pouch.

2. Sterilize in a gravity displacement steam autoclave using distilled water at a temperature of 270°F (132°C) for 20 minutes.

3. Remove and store so as to maintain sterile integrity of the pouch.

- Do not use tap water in the autoclave. Tap water may contain dissolved minerals that leave deposits on the fiber ends of the light guide.
- Do not add chemical solutions to the autoclave. These will stain or deteriorate (etch) the light guide fibers.
- Do not use a chemical autoclave.
- Do not place fiber optic light guides in the same autoclave with handpieces.

c) **HANDPIECE AND CONTROL UNIT:**

Plastic parts can be cleaned following these guidelines:

IMPORTANT:

- All Optilux plastic parts may be wiped with Cavicide surface disinfectant/cleaner, following the directions on the bottle. Do not use denatured alcohol, isopropyl alcohol, Lysol, phenol or ammonia complex or iodine complex solutions!

- Wipe, do not spray, solution onto plastic parts. Prevent liquids from entering openings on unit.

- ⚠ **CAUTION: Do not immerse the plastic parts in solutions. Use of solutions other than those recommended may damage plastic parts and will void product warranty!**

12. LIABILITY

KERR considers itself responsible for the effects on safety, reliability and performance of this product only if:

- Assembly operations, extensions, re-adjustments, modifications or repairs are carried out by persons authorized by KERR.

- The electrical installation of the relevant room complies with the IEC requirements.

- The equipment is used in accordance with these instructions for use.

13. WARRANTY

Kerr hereby warrants that for a period of two years from the date of purchase this instrument shall be free from defects in material and workmanship and will perform satisfactorily under normal use and service.

THE WARRANTY STATED HEREIN IS THE SOLE WARRANTY APPLICABLE TO KERR PRODUCTS. KERR EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. KERR'S LIABILITY WITH RESPECT TO ITS PRODUCTS IS EXPRESSLY LIMITED TO THE REMEDIES SET FORTH ABOVE. THE REMEDIES ARE THE BUYER'S EXCLUSIVE REMEDIES. KERR SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

14. ACCESSORIES & REPLACEMENT PARTS

Part No.	Fiber Optic Light Guides
20945	2mm Curved Light Guide (2mm x 70mm)
21185	4mm Curved Mini Turbo Light Guide (4mm x 77mm)
921309	8mm Curved Light Guide, Amber (8mm x 70mm)
20941	8mm Curved Light Guide, Standard (8mm x 70mm)
952213	8mm Curved Turbo+ Light Guide (8mm x 70mm)
21014	9mm Curved Disp. Plastic Light Guide (9mm x 70mm)
21059	9mm Curved Disp. Plastic Light Guide (9mm x 70mm), (Pkg. of 6)
20898	11mm Curved Light Guide, Standard (11mm x 75mm)
20499	11mm Curved Light Guide (11mm x 84mm)
20812	13mm Curved Light Guide (13mm x 84mm)
21282	Elliptical Light Guide Straight (18mm x 7mm)
21284	Elliptical Light Guide Curved (18mm x 7mm)
20879	Light Guide Holder (holds up to 6 light guides)
	Accessories
21042	Optic Maintenance Kit
20399	Disposable Hardness Disk, (Package of 6)
10503	Optilux Radiometer
	Eye Protection
920532	Optilux 20/20 Protective Goggles
20816	Protective Light Shield (fits all manufacturers' light guides)
	Replacement Parts
21237	Replacement Lamp, 80 Watt, OptiBulb
952212	Optilux 501 Replacement plastic front handpiece and filter assembly
30257	Fuse, 100-120V, T 1.6A (2 per unit)
30246	Fuse, 220-240V, T 0.8A (2 per unit)
21271	Mounting Bracket Kit